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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,937	04/05/2002	Katsutoshi Nagi	SPO-0210	1232

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EXAMINER

SANDERS, ALLYSON N.

ART UNIT PAPER NUMBER

2876

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/089,937

Applicant(s)

NAGI ET AL.

Examiner

Allyson N Sanders

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6,8,9,11 and 13 is/are rejected.
- 7) ☒ Claim(s) 3, 5, 7, 10, 12, 14, and 15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 and 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Continuing Data

1. This application is a 371 of PCT/JP00/06178 filed 09/08/2000.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4, 6, 8, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki (5,710,458).

Iwasaki teaches the following in regards to claims 1, 4, 6, 8, 11, and 13:

"The present invention relates to a thin semiconductor package suitable for configuring a portable electronic device such as an IC card and, in particular, the present invention relates to a semiconductor package connected to external equipment without contact." (Col. 1, lines 8-12).

"A semiconductor package in accordance with this invention comprises a circuit board having a region to mount an IC chip on a main side thereof, an IC chip mounted in said region of the circuit board, a shield resin layer burying or covering at least part of said mounted IC chip, and a first loop-like antenna pattern, formed integrally in a region

on the main side of the circuit board other than the region in which said IC chip is mounted, for transmitting and receiving a signal without the need of contact.

This invention is a semiconductor package with an antenna function for transmitting and receiving signals in a non-contact manner, and is characterized by the use of power induced electromagnetically through the loop-like antenna as drive power to the IC chip. That is, this invention focuses on the fact that sufficient electromagnetically induced power and signal intensity can be produced when the antenna of external equipment is near. If the signal frequency is within the microwave region, the loop-like antenna pattern can be smaller. In addition, if a plurality of loop-like antennas is provided, one used for signal transmission and another for the electromagnetic induction of drive power to the IC chip, signal processing and power induction can be carried out simultaneously, resulting in faster signal processing." (Col. 1 and 2, lines 61-17).

"In this invention, the circuit board includes those using as an insulator a synthetic resin such as an epoxy resin or ceramics such as alumina. The circuit board may be single-sided, double-sided, or multilayer-interconnected, but preferably has a thickness of about 0.2 mm to 1 mm, and a side length of 20 mm to 80 mm, so as to be thin and compact. On the other hand, a plurality of IC chips can be mounted on the circuit board depending on their functions, but those with high functions and capacity are desirably selected to simplify the configuration. The resin for burying or covering at least part of the semiconductor chip is, for example, an epoxy resin, and the burying or covering is carried out by a coating method or a molding method." (Col. 2, lines 57-2).

"In this invention, the semiconductor package is shielded with a resin. That is, at least the region in which the IC chip 2 is mounted is processed or molded with, for example, a thermoplastic resin to form a shield resin layer for burying or covering at least part of the IC chip 2, thereby providing the configuration desired as a semiconductor package." (Col. 3, lines 28-33).

"As is apparent from the above description, in the semiconductor package in accordance with this invention, the built-in IC chip is driven by the power induced electromagnetically by the antenna pattern performing reception. That is, the antenna pattern for transmission and reception is also used to cause electromagnetic induction, and the induced power is used to drive the IC chip." (Col. 4, lines 24-30).

Iwasaki teaches an IC chip, which is separated from an antenna by a resin which forms a shield. Iwasaki states that the IC chip is at least partially covered by the resin. It is obvious to one of ordinary skill in the art at the time the invention was made to cover the IC chip completely so that it is totally separated from the antenna. Iwasaki suggests this by stating that at least part of the IC chip is covered. At least indicates that the entire chip could be covered to form a complete separation from the antenna.

5. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki in view of Bard et al.

Iwasaki's teachings are discussed above. Iwasaki fails to teach a filter connecting the antenna to other electric circuits.

Bard et al teaches the following in regards to claims 2 and 9:

The radio frequency circuit 334 is connected to the reader antenna 322 via a bandpass filter 336 to remove noise.

Although Bard et al's general reference is not regarding the same type of communication device disclosed in the claims, Bard et al does teach a configuration that is well known in the art. Having an antenna connected to a circuit via a filter is common. One would be motivated to include this configuration in Iwasaki's semiconductor device in order to reduce noise so that the signal may be read more clearly and easily without interference.

Allowable Subject Matter

6. Claims 3, 5, 7, 10, 12, 14, and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims.

The following is an examiner's for allowance: Although Iwasaki teaches a communication device that supplies electric power to a communication partner and communicates therewith by electromagnetic induction on a non-contact basis and further teaches a shielding member separating the IC chip from the antenna, the above identified prior art of record, taken alone, or in combination with any other prior art, fails to teach or fairly suggest the specific features of claims 3, 5, 7, 10, 12, 14, and 15 of the present claimed invention. These features include the following: the communication device's filter having a frequency response identical with a frequency response of the portion of the second shielding member facing the front face of the antenna; the first shielding member having a double structure by being composed of an inner layer made

of a material that absorbs radio waves and an outer layer made of material that reflects radio wave, the first shielding member also having a recess formed in the shield so as to sink inward and where the antenna is arranged in the recess, the second shielding member is arranged so as to cover an opening of the recess. The above limitations were not found in any prior art and moreover, one of ordinary skill in the art would not have been motivated to come to the claimed invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Saitoh et al (6,137,447), Barnett et al (6,600,659), Katz et al (6,305,607), Tsubouchi et al (6,018,641).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Allyson Sanders* whose telephone number is (703) . The examiner can normally be reached between the hours of 7:30AM to 4:00PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee, can be reached on (703) 305-3503. The fax phone number for this Group is (703) 308-7722, (703) 308-7724, or (703) 308-7382.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [**allyson.sanders@uspto.gov**].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Allyson Sanders
Patent Examiner
Art Unit 2876
August 22, 2003



**THIEN M. LE
PRIMARY EXAMINER**